



Air Sampling Filter

In the photo, a technician is replacing a filter paper cartridge, or cassette, in a high-volume air sampling system known as Accu-Vol. Used by many municipalities and state or federal government agencies to monitor air quality for pollution control purposes, the cassette traps particulate matter in the air for laboratory analysis. Originally developed by Lewis Research Center and now manufactured by General Metal Works, Cleves, Ohio, the filter cassette offers improved sampling accuracy by eliminating inadvertent contamination.

During a cooperative air monitoring program with the city of Cleveland, Lewis Research Center saw a need for improving the filters in air samplers, which are typically deployed at exposed outdoor locations such as rooftops. The prior method of handling filters involved carrying them in a folder to the test site and inserting them manually in the air sampler; when the sample was obtained, the filter was removed by hand and delivered to the laboratory in a folder. This procedure allowed possible test-invalidating

contamination from materials other than particulate pollutants, caused by manual handling or by penetration of windblown matter during transit. The problem was solved by development of the cassette, in which the filter is sealed within a metal frame, protected in transit by a snap-on aluminum cover, thus handled only under clean conditions in the laboratory. General Metal Works fabricated the cassette to Lewis Research Center's specifications and later began manufacture of a modified version, designated GMW-3000, for use in the company's own Accu-Vol system and other types of air samplers.